

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A reproducing apparatus comprising:

a reproducing unit that extracts ~~recorded signals~~ from a recording medium in which ~~the signals that have same contents but are compressed in a plurality of different conditions~~ bit rates, and record management information that denotes a mutual association between said signals that have the same contents but are compressed in a plurality of different ~~conditions~~ bit rates ~~are recorded, respectively,~~ ~~any of said signals;~~

a decoding unit that decodes any of said signals extracted from said recording medium; and

a recording unit that records, in correspondence to said record management information, reproduction management information including reproduction ~~middle interruption~~ information that denotes ~~middle~~ a point of interruption in time of a reproduction of signals from said recording medium,

wherein the decoding unit decodes said signals according to a selected bit rate of said plurality of different bit rates from said point of interruption in time.

2. (Previously Presented) The reproducing apparatus according to claim 1, wherein said recording unit records said reproduction management information on said recording medium.

3. (Previously Presented) The reproducing apparatus according to claim 1, further comprising a built-in flash memory,

wherein said reproduction management information is recorded on said flash memory.

4. (Currently Amended) The reproducing apparatus according to claim 3, wherein said reproducing unit further extracts said reproduction management information from said flash memory, and based on said record management information and said reproduction management information, extracts, from said recording medium, signals after signals corresponding to said reproduction ~~middle~~interruption information included in said reproduction management information.

5. (Currently Amended) The reproducing apparatus according to any one of claims 1 to 4, wherein said reproduction ~~middle~~interruption information concerns elapsed time from start of reproduction of said signal.

6. (Previously Presented) The reproducing apparatus according to claim 3, wherein said recording unit further records, in correspondence to said record management information and said reproduction management information, identification information of said recording medium on said flash memory.

7. (Currently Amended) The reproducing apparatus according to claim 6, wherein said reproducing unit further extracts said record management information, said reproduction management information, and said identification information of said recording medium,

any of signals extracted from said recording medium is suitable for said reproducing unit and/or said decoding unit, and

said reproducing unit, based on said record management information, said reproduction management information, and said identification information of said recording medium, further extracts, from said recording medium, signals after signals corresponding to said reproduction ~~middle~~interruption information included in said reproduction management information.

8. (Previously Presented) The reproducing apparatus according to claim 1, wherein said different conditions concern different bit rates, different numbers of pixels, or different compression methods.

9. (Previously Presented) The reproducing apparatus according to claim 1,

wherein said signals that have the same contents but are compressed in a plurality of different conditions are recorded on said recording medium so that each of said signals can be continuously reproduced.

10. (Previously Presented) The reproducing apparatus according to claim 1, wherein said signals that have the same contents but are compressed in a plurality of different conditions are recorded respectively in continuous data areas, each of which has size that is equal to or larger than a predetermined size.

11. (Previously Presented) The reproducing apparatus according to claim 10,

wherein said recording medium is an optical disc, a magneto-optical disc, or a magnetic disc,

said reproducing unit has a head for reading a signal from said recording medium, and

said predetermined size is expressed by the following equation:

(equation 1)

$$V_o \times T_j \times V_r / (V_r - V_o)$$

(V_o : data transfer rate to said decoding unit (Mbps), T_j : maximum seek time of said head (second), V_r : data-reading rate of each of said signals from said recording medium by said head (Mbps)).

12. (Previously Presented) The reproducing apparatus according to claim 1,

wherein said signals that have the same contents but are compressed in a plurality of different conditions are recorded respectively in continuous data areas, each of which has size that is equal to or larger than a predetermined size, and

said continuous data areas are recorded in a form of being repeatedly alternately arranged.

13. (Previously Presented) The reproducing apparatus according to claim 10 or 12, wherein said signals compressed in a plurality of different conditions that are recorded in the continuous data areas, each of which has size that is equal to or larger than the predetermined size, have same reproduction time.

14. (Previously Presented) The reproducing apparatus according to claim 12, wherein said decoding unit further decodes signals compressed in a plurality of different conditions that are extracted from said recording medium.

15. (Previously Presented) The reproducing apparatus according to claim 8, wherein said different compression methods are MPEG2 and MPEG4, respectively.

16. (Currently Amended) A recording apparatus, comprising:

a recording unit that records, on a recording medium, signals that have same contents but are compressed in a plurality of different ~~conditions~~bit rates, and record management information that denotes a mutual association between said signals that have the same contents but are compressed in a plurality of different ~~conditions~~bit rates;

a reproducing unit that extracts a signal recorded on said recording medium;
and

a decoding unit that decodes ~~a~~the signal extracted from said recording medium,

wherein said recording unit records said signals that have the same contents but are compressed in a plurality of different ~~conditions~~bit rates, respectively, in continuous data areas, each of which has size that is equal to or larger than a predetermined size, and records said continuous data areas on said recording medium in a form of being repeatedly alternately arranged.

17. (Previously Presented) The recording apparatus according to claim 16,

wherein said recording medium is an optical disc, a magneto-optical disc, or a magnetic disc,

said reproducing unit has a head for reading a signal from said recording medium, and

said predetermined size is expressed by the following equation:

(equation 1)

$$V_o \times T_j \times V_r / (V_r - V_o)$$

(V_o : data transfer rate to said decoding unit (Mbps), T_j : maximum seek time of said head (second), V_r : data-reading rate of each of said signals from said recording medium by said head (Mbps)).

18. (Withdrawn) A recording and reproducing system, comprising:

a reproducing unit that extracts, from a recording medium in which signals that are compressed in a plurality of different conditions, and record management information that denotes a mutual association between said signals that are compressed in a plurality of different conditions are recorded, respectively, any of said signals;

a decoding unit that decodes any of said signals;

a transmitting unit that transmits any of said signals; and

a remote decoding unit that decodes said transmitted signal,

wherein said reproducing unit outputs said extracted signal to said decoding unit or said transmitting unit, and records, in correspondence to said record management information, reproduction management information including reproduction middle information with regard to decoding in said decoding unit or said remote decoding unit.

19. (Withdrawn) The recording and reproducing system according to claim 18, wherein said reproducing unit can transmit said extracted signal to said remote decoding unit, and in said transmission, based on said record management information and said reproduction management information, transmits signals after

signals corresponding to said reproduction middle information included in said reproduction management information.

20. (Currently Amended) A reproducing method, comprising the steps of:

extracting, recorded signals from a recording medium in which the signals that have same contents but are compressed in a plurality of different conditions bit rates, and record management information that denotes a mutual association between said signals that have the same contents but are compressed in a plurality of different conditions bit rates are recorded, respectively, any of said signals;

decoding any of said signals extracted from said recording medium; and

recording, in correspondence to said record management information, reproduction management information including reproduction middle interruption information that denotes a point of interruption in time middle of a reproduction of signals from said recording medium,

wherein said signals are decoded according to any of said plurality of different bit rates from said point of interruption in time.

21. (Currently Amended) The reproducing method according to claim 20,

wherein the step of recording, in correspondence to said record management information, said reproduction management information means a step of recording, in correspondence to said record management information, said reproduction management information on a flash memory,

the reproducing method further comprising the steps of:

extracting said reproduction management information from said flash memory, and

based on said record management information and said reproduction management information, extracting, from said recording medium, signals after signals corresponding to said reproduction middle interruption information included in said reproduction management information.

22. (Currently Amended) A computer readable medium, including a program that causes a computer to perform the steps of~~functions as the reproducing unit that extracts, extracting~~ from said recording medium, any of said signals, the ~~decoding unit that decodes~~decoding any of said signals extracted from said recording medium, and ~~the recording unit that records~~recording, in correspondence to said record management information, said reproduction management information, of the reproducing apparatus according to claim ~~1~~20.

23. (Currently Amended) A computer readable medium, including a program that causes a computer to perform the steps of recording, extracting and decoding according to claim 26~~functions as the reproducing unit that extracts said reproduction management information from said flash memory, and based on said record management information and said reproduction management information, extracts, from said recording medium, signals after signals corresponding to said reproduction middle information included in said reproduction management information, of the reproducing apparatus according to claim 4.~~

24. (Cancelled).

25. (Currently Amended) A computer readable medium, including a data structure, wherein signals having same contents are compressed in a plurality of different ~~conditions~~bit rates and are independently recorded on a ~~the~~ recording medium, the data structure being capable of recording record management information that denotes a mutual association between said signals that have the same contents but are compressed in a plurality of different conditions, and reproduction management information including reproduction ~~middle~~interruption information that denotes ~~middle~~a point of interruption in time of reproduction of signals from a ~~the~~ recording medium, in correspondence to said record management information.

26. (New) A recording method, comprising the steps of:

(a) recording, on a recording medium, signals that have same contents but are compressed in a plurality of different bit rates and record management information that denotes a mutual association between said signals that have the same contents

but are compressed in a plurality of different bit rates;

(b) extracting a signal recorded on said recording medium;

(c) decoding the signal extracted in step (b), and

wherein said signals in step (a) that have the same contents but are compressed in a plurality of different bit rates, respectively, are recorded in continuous data areas, each of which has size that is equal to or larger than a predetermined size, and said continuous data areas are recorded in a form of being repeatedly alternately arranged.

27. (New) A recording method, comprising the steps of:

(a) recording, on a recording medium, at least one source of video signals and at least one source of audio signals;

(b) compressing the video and audio signals at a first bit rate;

(c) compressing the video and audio signals at a second bit rate, the second bit rate being different from the first bit rate;

(d) recording record management information that denotes a mutual association between the video and audio signal compressed at a first bit rate in step (b) and the video and audio signal compressed at a second bit rate in step (c) that have the same contents;

(e) extracting a signal recorded on said recording medium;

(f) decoding a signal extracted from said recording medium, and

wherein said video signal and said audio signal compressed in said first and second bit rates are recorded in continuous data areas, each of which has size that is equal to or larger than a predetermined size, and said continuous data areas are recorded in a form of being repeatedly alternately arranged.